

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
DIVISION OF EMERGENCY MEDICAL SERVICES

Regional Topical QI Study in conjunction with the
Suffolk Regional Medical Advisory Committee
For the Contract Period July 1, 2007 – June 30, 2008
Fourth Quarter Submission of Results and Analysis

RESULTS

During the study period (October 1, 2007 – May 31, 2008), more than ten thousand (>10,000) PCRs were received and screened for a Presenting Problem of *Cardiac Related (Potential) or Pain* indicating non-traumatic chest pain. Skilled screeners omitted PCRs with Advanced Life Support (ALS) Interventions and PCRs with any other Presenting Problem, yielding four hundred fifty six (456) applicable cases.

Consistent with the methodology described in the study abstract, the findings are shown in the tables below.

Table 1 . ASA Administration

n= 456

QUERY	CASES	PERCENTAGE
ASA Indicated / administered	61	13%
ASA Indicated / not administered	240	53%
ASA Contraindicated / withheld	111	24%
ASA Contraindicated/administered	0	0%
Incomplete data	44	10%
TOTAL	456	100%

Table 2 . Results of Documentation

QUERY	CASES	PERCENTAGE
Onset	262	57%
Provocation	100	22%
Quality	239	52%
Radiation	138	30%
Severity	253	55%
Time	109	24%
Interventions	282	62%

In a separated and related study, during the study period, we examined the use of pre-hospital 12-lead EKG in the Suffolk County EMS System. Consistent with the methodology described in the study abstract, the Medical Control database was queried for all ALS cases presented to Medical Control with a primary chief complaint of non-traumatic chest pain / discomfort, and where the s/s of ischemic chest pain were present, resulting in the administration of NTG, yielding one thousand six hundred forty eight (1648) cases. Two hundred ninety four (294) cases run by agencies without 12-lead EKG capability were then excluded, yielding one thousand three hundred fifty four (1354) total cases.

Table 3. Application of 12-lead EKG

n = 1354

QUERY	CASES	PERCENTAGE
Total ischemic CP population	1354	
12-lead acquired population	1122	83%
12-lead acquired / transmitted	145	13%
12-lead acquired / not transmitted	977	87%
12-lead present, but not acquired	232	17%

ANALYSIS

Despite widespread EMS system dissemination of the modification that added ASA Administration by BLS Providers utilizing the NY State BLS Protocol – Adult Cardiac Related Problem - along with requisite education and training in original, refresher and CME classes since January 2007, the results demonstrate that more than fifty percent (>50%) of the patients that should have received ASA did not. Results also demonstrate proper documentation of Onset, Provocation, Quality, Radiation, Severity, Time & Interventions (OPQRSTI) occurs in only one-third to one-half (33%-50%) of the cases. A reasonable conclusion to draw is that if complete and thorough history and physical examination findings are not being documented, they are not being performed. Therefore, if complete and thorough history and physical examination is not being performed, technicians cannot adequately follow the applicable protocol, and thus, patients do not benefit from approved therapy.

Strategies in place to increase the number of ALS agencies using 12-lead EKG appear to be successful, and it is encouraging that more than eighty percent (>80%) of ischemic chest pain patients had a 12-lead EKG performed. The relatively low number of acquired 12-leads that were transmitted to Medical Control is due, in large part, to changes in digital communications technology that require specific cellular telephonic equipment in the field and specific receiving capacity at Medical Control. Despite the low percentage of transmitted 12-lead EKGs, previous study in Suffolk County demonstrated that there is clear benefit to patients arriving in local emergency departments with prehospital EKG or serial EKGs, as valuable as time to treatment is significantly reduced.

RECOMMENDATIONS

Increased focus on adherence to proper history taking /physical examination techniques, and comprehensive documentation of same needs to occur through targeted education & training for EMS providers in all original, and refresher courses, and through targeted CME classes. Similarly, system wide reminders about protocol modifications that now include ASA administration by basic life support technicians to augment assistance with the administration of patients pre-prescribed NTG to refocus attention in that direction should be sent.

As NY State migrates towards the designation of ST-Elevation Myocardial

Infarction, (STEMI) Centers, continued emphasis on the application of pre-hospital 12-lead EKG by all ALS agencies will occur, including a stronger emphasis on the now-published requirement that all agencies equipped with 12-lead EKG machinery have the ability to transmit to Medical Control.

After a course of system wide notifications and remedial efforts, the subject should be reviewed again to ensure that EMS providers in the Suffolk County EMS System achieve a high degree of concordance with state and local protocol for the prehospital treatment of ischemic chest pain.

RD:7/08.